Appl. No. 09/894,225
Amdt. dated January 18, 2005
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 2671

PATENT

REMARKS/ARGUMENTS

Claims 6-8, 15-17, 23, 27, 34, 38, 44, and 48 were pending in this application. Claims 6, 8, 15, 17, 23, 34 and 44 have been amended. Thus, claims 6-8, 15-17, 23, 27, 34, 38, 44, and 48 remain pending.

Section 103(a) Rejections

In the office action, claims 6-8, 15-17, 23, 27, 34, 38, 44, and 48 were rejected under section 103(a) as being unpatentable over Foley et al., *Computer Graphics: Principles and Practice Second Edition in C* (hereinafter referred to as "Foley") in view of Persistence of Vision Ray-Tracer (hereinafter referred to as "POV-Ray"). Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

The applicant has amended independent claim 6 to state, in part *"the rendering system constraining the rendering of the object in accordance with the object visibility rules, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, or both."* Applicant respectfully submits that the cited references do not teach or suggest this claim element.

Foley is a textbook on computer graphics describing ray tracing, which is a rendering technique that renders an object by simulating the way rays of light travel in the real world. In the office action, the examiner asserts Foley describes object visibility rules (citing to figure 16.56, p.780). Figure 16.56 provides code for a simple recursive ray tracer.

Applicant submits such teachings fail to disclose or suggest the embodiment of claim 6, which includes *"constraining the rendering of the object in accordance with the object visibility rules, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, or both."*

In the invention, a rendering system constrains the rendering of an object according to object visibility rules. The object visibility rules allow a graphics designer to specify whether and how certain objects can affect the appearance of certain other objects. For example, a graphics designer may wish to force one object, A, not to be shadowed from another

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object, B, even though object B may lie in a path between object A and a light source. The designer would then specify an object visibility rule that no shadows from object B should be cast on object A. A ray tracer in this rendering system is adapted to consult object visibility rules when performing ray tracing.

In contrast, the ray tracer in Foley merely performs ray tracing according to the way rays of light travel in the real world. Thus, Foley does not disclose nor suggest object visibility rules that allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects and or lights.

The examiner also cites POV-Ray as showing this element in claim 6. POV-Ray is a ray-tracing software, but does not teach object visibility rules. In fact, the examiner cites Foley for teaching object visibility rules. Thus, it does not appear that POV-Ray discloses or suggests the claimed constraining the rendering of the object in accordance with the object visibility rules, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects and or lights.

For at least the reasons stated above, the cited references do not show or suggest the features of claim 6. Hence, claim 6 should be allowable over Foley and POV-Ray.

Independent claims 8, 15, and 17 include similar limitations to claim 6, and the applicant therefore respectfully submits that claims 8, 15, and 17 should be allowable for at least similar reasons.

Independent claim 23 as amended recites, among other elements, "*a ray tracer coupled to the scene server that determines intersection of rays with certain of the plurality of objects included in a scene, the ray tracer receiving the object visibility rules and constraining the ray intersection determination in accordance therewith, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, or both.*" Foley and POV-Ray do not to teach or suggest this element since the techniques disclosed in those references do not constrain ray intersection determination in accordance with object visibility rules, wherein the object visibility rules allow a graphics

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designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, as discussed above. Hence claim 23 is allowable over Foley and POV-Ray.

Independent claims 34 and 44 include similar limitations to claim 23, and claims 34 and 44 are allowable for at least similar reasons.
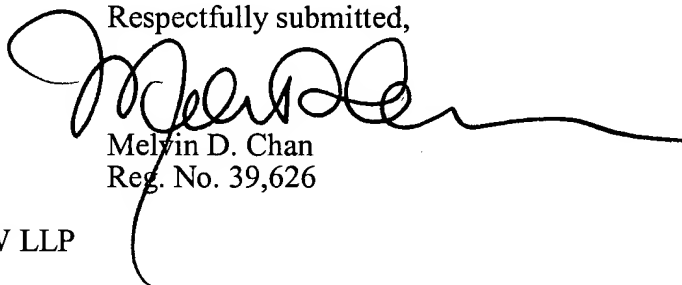
Dependent claims 7 (dependent from claim 6), 16 (dependent from claim 15), 27 (dependent from claim 23), 38 (dependent from claim 34) and 48 (dependent from claim 44), should be allowable for at least similar reasons as the independent claims they depend from.

CONCLUSION

In view of the foregoing, applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal notice of allowance at an early date is respectfully requested.

If the examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400, extension 5213.

Respectfully submitted,

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